



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,524	11/15/2000	David A. Kapilow	1999-0096	6104

7590 09/20/2004
AT & T Corporation
PO Box 4110
Middletown, NJ 07748

EXAMINER

HARPER, V PAUL

ART UNIT	PAPER NUMBER
----------	--------------

2654

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/700,524

Applicant(s)

KAPILOW, DAVID A.

Examiner

V. Paul Harper

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9,11-14,16-18,21-25,27-29,32 is/are rejected.
- 7) ☒ Claim(s) 10,15,19,20,26,30 and 31 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/21/02</u> . | 6) <input type="checkbox"/> Other: ____. |

Detailed Action

U.S. National Stage Application

1. Acknowledgement is made of the indication that the present application is filed under 35 U.S.C. 371, of the indication that the required form PCT/DO/EO/903 is present, and of the use of transmittal form PCT/DO/EO/1390. Thus, the present application is being treated as a filing under 35 U.S.C. 371.

Information Disclosure Statement

2. The Examiner has considered the references listed in the Information Disclosure Statement dated 3/21/02. A copy of the Information Disclosure Statement is attached to this office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims **3, 4, and 14** recite the limitation "estimating the pitch period of the erased frame" in line 3 of claim 3. There is insufficient antecedent basis for this limitation in the claim.

4. Claims **3, 4, and 14** recite the limitation "copying one or more of the most recent pitch periods from the first memory to a second memory" in lines 4 and 5 of claims 3. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 2654

5. Claims **6, 7, 8, 16, 22, 23, 24** and **32** recite the limitation "the number of pitch periods" in line 5 of claim 6, and line 4 of claim 22. There is insufficient antecedent basis for this limitation in the claim.

6. Claims **11** and **27** recite the limitation "the number of pitch periods used" in line 1 of the respective claims. There is insufficient antecedent basis for this limitation in the claim.

7. Regarding claims **13** and **29**, where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "high frequency input signals" in claims 13 and 29 is used by the claim to mean "high fundamental frequency in the input signals", while the accepted meaning is "high frequency signals in the allowed range of input frequencies." The term is indefinite because the specification does not clearly redefine the term.

8. Furthermore, it is maintained that the claims are replete with mistakes similar to the ones mentioned above and should be corrected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 2, 5, 9, 11, 13, 17, 18, 21, 25, 27, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen (U.S. Patent 5,615,298), hereinafter referred to as Chen.

Regarding claims 1 and 17, Chen discloses a method for excitation signal synthesis during frame erasure or packet loss. Chen's method includes the following steps:

- receiving encoded frames of compressed speech information transmitted from an encoder (Fig. 2, "i", col. 2, I. "Introduction");
- determining if an encoded frame is erased, lost or corrupted in transmission (col. 4, lines 41-57),

Art Unit: 2654

- decoding the received encoded frames into decoded frames if the determining step determines that the encoded frame is not erased (col. 4, line 59 through col. 5, line 7);
- generating a synthetic frame for the erased frame using data of previously decoded frames if the determining step determines that the encoded frame is erased (col. 5, lines 8-53);
- updating a first memory with data of the decoded and synthetic frames (Fig. 1, col. 7, line 64 through col. 8, line 6); and
- outputting the decoded and synthetic frames as audio signals (col. 4, lines 29-31; Fig. 12, item 740 outputs digitized speech, col. 11, lines 8-17).

Regarding claims **2** and **18**, Chen teaches everything claimed, as applied above (see claims 1 and 17); in addition, Chen teaches “delaying the output of the audio signal by a predetermined time period using a delay memory” (e.g., col. 13, lines 30-31).

Regarding claims **5** and **21**, Chen teaches everything claimed, as applied above (see claims 1 and 17; in addition, Chen teaches “determining if one or more subsequent encoded frames are erased after a synthetic frame is output” (col. 6, lines 13-18).

Regarding claims **9** and **25**, Chen teaches everything claimed, as applied above (see claims 5 and 21); in addition, Chen teaches “wherein if the subsequently encoded

Art Unit: 2654

frames are not erased, the method further comprises: processing the first non-erased encoded frame using an FEC process" (col. 8, lines 43-60).

Regarding claims **11** and **27**, Chen teaches everything claimed, as applied above (see claims 1 and 12). (Note: this claim is rejected under 112 2nd paragraph, see ¶6, above). In addition, Chen teaches "the number of pitch periods used to generate the synthetic frames increases as a function of time" (col. 5, lines 34-52, where the postfilter calculates pitch periods (col. 25, §4.6) and the synthesis process is repeated as necessary where the longer the missing interval the greater the number of required pitch periods).

Regarding claims **13** and **29**, Chen teaches everything claimed, as applied above (see claims 1 and 17). (Note: this claim is rejected under 112 2nd paragraph, see ¶7, above). In addition, Chen teaches "for high frequency input signals, one or more pitch periods are used to generate the synthetic frames" (col. 5, lines 40-45, since for higher fundamental frequency signals the pitch periods become shorter, thus a frame is more likely to contain one or more pitch periods).

10. Claims 1, 12, 17 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Prieto Jr. (U.S. Patent 5,907,822), hereinafter referred to as Prieto.

Art Unit: 2654

Regarding claims **1** and **17**, Prieto discloses a method for implementing a loss tolerant speech decoder for telecommunications where if a speech frame is detected to be lost or in error, then an extrapolation module is executed to generate replacement parameters (title, abstract). Prieto's method includes the following steps:

- receiving encoded frames of compressed speech information transmitted from an encoder (Fig. 6, col. 4, lines 23-26);
- determining if an encoded frame is erased, lost or corrupted in transmission (Fig. 6, LOST, col. 4, lines 27-28, col. 6, lines 25-28),
- decoding the received encoded frames into decoded frames if the determining step determines that the encoded frame is not erased (Fig. 6, col. 4, lines 23-26, lines 31-33);
- generating a synthetic frame for the erased frame using data of previously decoded frames if the determining step determines that the encoded frame is erased (col. 4, 27-32. col. 6, lines 32-37);
- updating a first memory with data of the decoded and synthetic frames (Fig. 6, item 66, col. 4, lines 27-33, past-history buffer with both normal and synthesized parameters corresponding to frames; col. 6, lines 37-39); and
- outputting the decoded and synthetic frames as audio signals (Fig. 6, SPEECH OUT, col. 4, lines 30-37).

Regarding claims **12** and **28**, Prieto teaches everything claimed, as applied above (see claims 1 and 17). In addition, Prieto teaches that "the generating step uses

Art Unit: 2654

an encoder so the decoder's state variables track the synthetic frames" (Fig. 6, item 72, lines 40-46).

Allowable Subject Matter

11. Claims **10, 15, 19, 20, 26, 30 and 31** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim **19**, it is noted that the closest prior art of record, Chen (U.S. Patent 5,615,298), teaches the estimation of the pitch of the erased frame and the coping of current sample (col. 5, lines 37-45), but Chen does not teach the specified use of the first, second and third memories where an overlap adding operation is performed on the third memory with a portion of the pitch period stored in the second memory. Thus cited prior art alone or in combination does not fairly suggest or disclose the claimed combination of features.

Regarding claims **10** and **26**, it is noted that the closest prior art of record, Chen (U.S. Patent 5,615,298), teaches the coping of the sample count corresponding to a pitch period until a good frame is received (col. 5, lines 37-45), but Chen does not teach the attenuating of the fifth memory based on the length of the erasure if the determining step determines the erased frames exceed a predetermined length. Thus the cited prior art alone or in combination does not fairly suggest or disclose the claimed combination of features.

Art Unit: 2654

Citation of Pertinent Art

12. The following prior art made of record but not relied upon is considered pertinent to the applicant's disclosure:

- Chen (U.S. Patent 6,351,730) discloses audio coding with adaptive frame loss concealment.
- Perkins et al. ("A Survey of Packet Loss Recovery Techniques for Streaming Audio," IEEE Network Sept./Oct. 1998) teach packet loss recovery techniques give advantages of the various techniques.
- Stenger et al. ("A New Error Concealment Technique for Audio Transmission with Packet Loss," Proc. European Signal Processing Conference, Trieste, Italy, Sept. 1996) teach an error concealment technique using overlap adding.

Conclusion

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to:

Crystal Park II
2121 Crystal Drive
Arlington, VA.
Sixth Floor (Receptionist)

Art Unit: 2654

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. V. Paul Harper whose telephone number is (703) 305-4197. The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-9645. The fax phone number for the Technology Center 2600 is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service office whose telephone number is (703) 306-0377.

VPH/vph
September 14, 2004



VIJAY CHAWAN
PRIMARY EXAMINER